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ABSTRACT

This study investigated stress levels and the sources of stress upon students enrolled at American River College (California), a community college of 20,000 students. Participants responded to a questionnaire measuring degrees of stress experienced in 43 life events within the past 12 months. Each individual's stress weights were then summed to yield a total stress event score. Data were collected on a sample of 2,615 students, 64% of whom were female, with a mean age of 22. Primary findings revealed that 16% of the sample had stress event scores that placed them at least one standard deviation above the mean. While no statistically significant difference between the total stress event means of male and female students were found, there were gender differences in the rates of endorsement for several individual items making up the scale. The students who had significantly higher total stress event means displayed one or more of the following characteristics: (1) under the age of 24; (2) non-white; (3) carrying 7-11 units; and (4) lower GPAs (1.99 or less). The most stressful item was being raped, which was indicated by 7.7% of the sample. The most frequently marked item was lack of sleep, at 91%. This document includes an explanation of the study, the survey used, descriptions of the project sample and stress event score results, and recommendations to faculty for intervention. Tables 1-10 contain student stress event data. Contains 13 references. (AS)

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Life's Stress Events That American River College Students Experience

by

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R. A. Rasor

Life's Stress Events That American River College Students Experience

Richard A. Rasor, Cathleen Grill, James E. Barr

Abstract

The research purpose of this study was to determine stress levels and the sources of stress upon students enrolled at American River College, a public community college with an enrollment of 20,000 students in Sacramento, California. The Social Readjustment Rating Scale (SRRS), first developed by Holmes & Rahe in 1967, was updated and modified for our use with current students. The final questionnaire used in this study contained 43 life events which were previously assigned weights. A respondent was asked to endorse a particular item if he or she experienced the event within the past 12 months. The stress weights for each individual were then summed to yield a total stress event score. Students who did experience an event were also asked to indicate the degree of stress experienced as a result of the event using a 5-point scale ranging from *Not at all stressful* to *Highly stressful.* Data were collected during two recent semesters which resulted in a sample size of 2,615 (64% female), and a median age of 22 years. Various analyses were conducted including the distribution of stress scores, the items most frequently endorsed as having been experienced by individuals within the sample, and how total stress event scores differed as a function of student demography.

The primary findings were: (1) A little over 16% of the sample had stress event scores that placed them at least one standard deviation above the mean; (2) There was no statistically significant difference between the total stress event means of male and female students. However, there were gender differences in the rate of endorsement for several individual items making up the scale; (3) Younger students ($\leq$ 24 years) had significantly higher total stress event means than older students (25+ years); (4) Non-white students had significantly higher total stress event means than white students; (5) Students carrying 7-11 units had significantly higher total stress event means than either part-time or full-time students; and (7) Students with lower GPA's (1.99 or less) and those with modest GPA's (2.00 to 2.49) had significantly higher total stress event means than students with GPA's of 3.00 or higher. The most stressful single item was *Being raped* which was endorsed by 7.7% of the sample. The highest rate of endorsement was 91.3% for the item, *Lack of sleep*. Recommendations for college staff are given.

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Life's Stress Events That American River College Students Experience[1]

Stress occurs whenever there is any type of demand placed upon the body Stress is the body's natural response to any stimulus, whether the stimulus is perceived as "good" or "bad" by the individual (Selye, 1976). Thus stress occurs continuously - without it is death. Because any demand creates stress, including just a change in one's life, then a supposedly pleasant event like getting married may not be dramatically different from a supposedly unpleasant event like divorce. It generally is not the environmental stimulus that determines the degree of stress, but the person. In this way an event like divorce may be welcomed and create relatively little stress, while getting married, with all its preparation, may make the prospective bride or groom thankful that it will soon be over. We tend to think of stress as being restricted to a psychological event. But any stimulus, even drinking a Coke, creates stress because the body must react to it. And so the challenge facing people is certainly not to avoid all stress which would be impossible anyway, but to avoid **excessive stress**, sometimes referred to as distress. Everyone knows that sustained high levels of stress eventually takes its toll upon the well being of an individual. Mild cases may be felt as simple fatigue, while in more severe cases, the sustained excessive stress may result in a whole host of psychosomatic (or somatopsychological) complaints including profound fatigue. In extreme cases an individual may die from the stress even long after the stimulus (the stressor) has been removed or terminated. The delayed feature of reacting to excessive stress is well known. For example, consider the extreme case of POW's who must harness all their physical and psychological energy just to survive physical torture, solitary confinement, backbreaking work, starvation, and the ever present threat of immediate extermination. Some POWs have endured these types of hardships for years and yet when they are finally released and returned home, many physical and psychological problems develop. Some are even fatal. And so the effects of sustained extreme stress may come after the individual believes that matters are now much better than they were.

Students attending community colleges or universities are no longer restricted to the 18-21 year-olds that often come to mind when one refers to college freshmen, sophomores, juniors, or seniors. The median age at our college is presently 26 and rising. With increasing age and diversity comes more varied backgrounds. It is no longer unusual to interact with students who have a family, experienced divorce, already worked at several jobs, and who are struggling to stay financially afloat. Today our students mirror the community in terms of joys and distresses. If the community is largely stressed to alarming degrees, then so will the students who come from that community.

Our motivation in doing this study was to learn more about the stress levels of students at our institution plus provide students in the first author's classes (Statistics for the Behavioral Sciences) with first hand experience in data collection, statistical analysis and interpretation. The research question for this study was simply: *What is the level of stress experienced by currently enrolled students at American River College?* If it turned out to be generally high, what might the college be capable of doing to lower the stress levels? In order to evaluate the level of student stress, we used the number of life change units experienced within the past 12 months.

Holmes and Rahe (1967) were among the first to develop a scale that assessed stress by measuring the number of changes experienced in one's life. They were able to show that the sum total of recent life changes (e.g., moving one's residence) showed a small relationship with subsequent illness. That relationship has also been documented elsewhere (O'Leary, 1990). The more changes, the greater probability of subsequent illness. Their scale, called the Social Readjustment Rating Scale (**SRRS**) assigns weights to individual items. For example, *death of a spouse* is given slightly over twice the "stress weight" as *fired at work*. A respondent is asked to endorse a particular item if he or she

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[1] We wish to acknowledge the data collection efforts of students enrolled in Statistics for the Behavioral Sciences who did a first rate job.

experienced the event within the past 12 months. The stress weights for each individual are then summed to yield a **stress score**. Since Holmes and Rahe's pioneering study, many subsequent scales have been developed to measure the types of stress events (life changes) that people face in their lives, (e.g., Daniels, 1982; Lustman, 1984; Renner & Macklin, 1998). Such developed scales have also been used to show the relationship between stress brought about by life's events and student behavior such as the decision to return to college, illness, and depression, (Blaukopf, 1981; Roehl & Okun, 1984; Dalton, 1983; Frasier, & Schauben, 1994). Gender differences have also been examined by Sowa & Lustman (1984). Finally, such scales have been used to measure the relationship between stress and academic performance in college students, (Knapp, 1975; De Meuse, 1985). Many of the above mentioned authors used modifications of the original Holmes and Rahe scale because of inappropriate or dated items (e.g., *mortgage over $10,000*).

Development of the Stress Questionnaire

We started with the questionnaire developed by Renner & Mackin (1998) because it was already adapted for college students. Their rating scale was also modified into a 5-point scale that we thought would be more reliable than using 7-points. Our scale was: *(1) Not at all stressful (2) Slightly stressful (3) Moderately stressful (4) Highly stressful (5) Extremely stressful*. Phase 1 of the current study had 120 general psychology and research/statistics students update Renner & Mackin's stress event items by either adding new items, (e.g., *finding quality child care*) and further deleting others that our students deemed inappropriate, (e.g., *fraternity or sorority rush*) or low interest for many community college students, (e.g., *attending an athletic event*). The final questionnaire used in this study contained 43 stress items (life events) plus 5 demographic questions. The complete questionnaire is shown as Table 1.

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TABLE 1. Stress Event Questionnaire

Survey of Life Events and Stress

A number of years ago, researchers found a small but positive relationship between life events that many of us experience, and the likelihood of becoming physically ill. It is no longer a secret that excessive stress whether from positive events like marriage or negative events like death of a relative, can affect one's subsequent health. Personnel in the Research Office at American River College are interested in what the types of events students' experience and the degree of stress such events may cause. **This is an anonymous survey so do not put your name or social security number on the answer sheet.** To obtain further information about this survey, contact Dr. Richard A. Rasor at (916) 484-8166 or Cathie Grill at 916-484-8679.

The list of items below does not cover all possible stressful events. Rather, they are a sample of life events which have appeared on other surveys.

If you have EXPERIENCED any of these "events" within the last 12 months, please rate the level of stress you felt using the A-E scale below. If you did NOT experience an "event" within the past 12 months, mark "J" (not applicable). Thank you.

A. Not at all stressful
B. Slightly stressful
C. Moderately Stressful
D. Highly Stressful
E. Extremely Stressful

J. Not Applicable

Note:
If you have not experienced this in the past 12 months please mark J

1. Difficulties with parents
2. Oversleeping for an exam
3. New job
4. Finals week
5. Change in work ho3urs or conditions
6. Writing a major term paper
7. Major change in eating habits
8. Flunking a class
9. A class you hate
10. Ending a steady dating relationship
11. Having a boyfriend or girlfriend cheat on you
12. Financial difficulties
13. Change in sleeping habits
14. Difficulties with spouse/significant other
15. Sense of overload in school or work
16. Finding quality child care
17. Getting married
18. Negative consequences of drugs or alcohol
19. Difficulties with children
20. Talking or performing in front of a class
21. Lack of sleep
22. Changes in household situation (moved, other person/child moved in)
23. Difficulties with a roommate (not spouse or significant other)
24. Death of a close friend (not family)
25. Being raped
26. Being accused of sexual harassment/rape
27. Death of a close family member or spouse
28. Contacting a sexually transmitted disease (other than AIDS)
29. Declaring a major or concerns about immediate future educational plans

TABLE 1. Stress Event Questionnaire Continued

30. Concerns about you or your partner becoming pregnant
31. Serious illness in a close friend or family member
32. Confrontation with professor
33. Maintaining a steady relationship
34. Problems commuting to campus, work, or both
35. Finding out you are HIV-positive
36. Getting sick and thereby missing class, work or both
37. Major concerns about your appearance
38. Falling asleep during class
39. Divorce
40. Marital separation
41. Fired at work
42. Self impotency (erection problems)
43. Being pregnant (yourself)

Please answer a few more questions about yourself.
All answers should be marked on the SCANTRON as before.

44. What is your gender?

A. Female **B.** Male

45. What is your age group?

A. 20 or less
B. 21 to 24
C. 25 to 29
D. 30 to 39
E. 40 and over

46. What ethnicity do you most identify with?

A. Asian
B. African American
C. White
D. Hispanic
E. Other (American Indian/Alaskan, Filipino, Pacific Islander)

47. What is your **Total** unit load for this semester?

A. 1 to 6 units **B.** 7 to 11 units **C.** 12 or more units

48. What is your total college G.P.A.?

A. No college units completed
B. 1.99 or below (Below "C")
C. 2.0 to 2.49 (Low "C" to middle "C")
D. 2.5 to 2.99 (High "C")
E. 3.0 to 3.49 (Low "B" to middle "B")
F. 3.5 or above (High "B" to an "A")

Thank you for your Participation

Phase 2 of the study consisted of developing weights for each of the 43 stress items. The questionnaire was administered to 128 lower division social psychology students who were instructed to evaluate the level of stress they thought each event (item) merited on the 5-point scale ranging from *Not at all stressful* to *Highly stressful* as opposed to indicating if they had experienced the event themselves. Following this procedure item means were calculated and weights established in the following way: The item with the highest mean was given a weight of 100. All other item means are divided by the value of the highest mean and multiplied by 100 to convert to a percentage. For example, if the highest item mean was 4.00, then another item with a mean of 3.00 is given a weight of 75 (3.00 divided by 4.00 times 100 and rounded). Upon examining the set of resulting weights, it appeared to us that the scale had too narrow a range. For example, the item with the lowest mean was 2.20 while the highest mean came in at 4.80. Applying the formula as described above gave the 2.20 mean a weight of 46 (2.20 is 46% of 4.80). In order to "stretch" the scale somewhat, all the means were squared and then the usual formula was applied. Thus $2.20^2 = 4.84$ while $4.80^2 = 23.04$. Dividing 4.84 by 23.04 and multiplying by 100 is 21, the new weight for the lowest item. This resulted in a final range for item weights of 21 to 100.

The Sample

Phase 3 of the study was the first collection of stress event data during the fall semester of 1998. Data were collected by students enrolled in two sections of Statistics for the Behavioral Sciences taught by the first author. These students received a small number of points toward their final grade as a reward for their efforts. The only restriction put upon them was that all questionnaire results had to represent currently enrolled students at American River College. The criteria for rejection (not told to the student data collectors) included any one of the following: (1) respondents who indicated they had experienced all the events (stress items) within the past year; (2) respondents who indicated they had experienced none of the events within the past year; (3) all female respondents who indicated that they had experienced self impotency (which was defined in the questionnaire); (4) all male respondents who indicated that they had experienced self pregnancy; and (5) respondents who did not properly fill out the scanner sheet and/or who left several items blank such as demographic questions. Using these criteria, slightly over 100 questionnaires were discarded from the database. The final sample size for phase 3 was 987 students who were in attendance at American River College during the fall 1998 semester.

Phase 4 of the study was the second collection of stress event data from students enrolled during the spring semester of 1999. Respondents were told not to take the questionnaire a second time if they had been sampled the previous semester. Once again, students enrolled in sections of Statistics for the Behavioral Science served as the data collectors. They obtained valid data from 1,628 additional students enrolled during that semester. The final sample (from both semesters) consisted of 946 males and 1669 females (total $n = 2{,}615$) with a median age of 22.2 years and 66% Caucasian. Compared with the population of all students at American River College, the combined sample was over-represented by females (+7.8%), and over-represented by students 20 years of age or less (+11.9%). There was close representation in terms of ethnicity.

Stress Event Score Results

The means for stress event items from the first sample (n = 987) were compared with the means of items from the second sample (n = 1,628). The resulting correlation of mean values was so high, [$r\,(41) = .94$, $p < .001$], that we felt justified in combining the results from both samples. Reliability analysis was conducted on the stress scale using Cronbach's alpha for internal consistency which was .89. Validity was assessed as the correlation between each item rating (0, *Not experienced* to 5, *Extremely stressful*) and the corrected residual sum of all items without weights. The range of item validity coefficients was from .14 to .52 with a median coefficient of .40.

Primary analyses included the formation of a distribution of total stress scores, demographic differences in total scores, and the items most frequently endorsed as having been experienced by individuals within the sample. Total stress scores were generated in the following way: If a respondent

indicated experiencing an event (an item) within the past 12 months, the weighted value for that item became part of his total score. Thus total score was the simple sum of all item weights for all items endorsed. These total scores were unaffected by how the respondent rated the stress level for the item on the sliding 5-point scale. Either the respondent experienced the event or not. The raw score mean for the composite sample was 1137.89 (SD = 405.84) with a range from 90 to 2,485 (z score range of -2.58 to 3.32). Because the magnitude of these numbers are perceptually difficult to reflect upon and compare across groups, all raw stress scores were converted to standard scores where the mean equals 500 and the standard deviation equals 100. This procedure has no effect upon analyses other than to make the numbers more "presentable." For example, the correlation between all raw scores and accompanying standard scores is a perfect +1.00.

The distribution of standardized stress scores may be examined in Figure 1. The median value is 488, slightly lower than the mean of 500. This indicates some positive skewness in the distribution (index of skew = .51). Kurtosis (peakedness) was also present but to a small degree (.24).

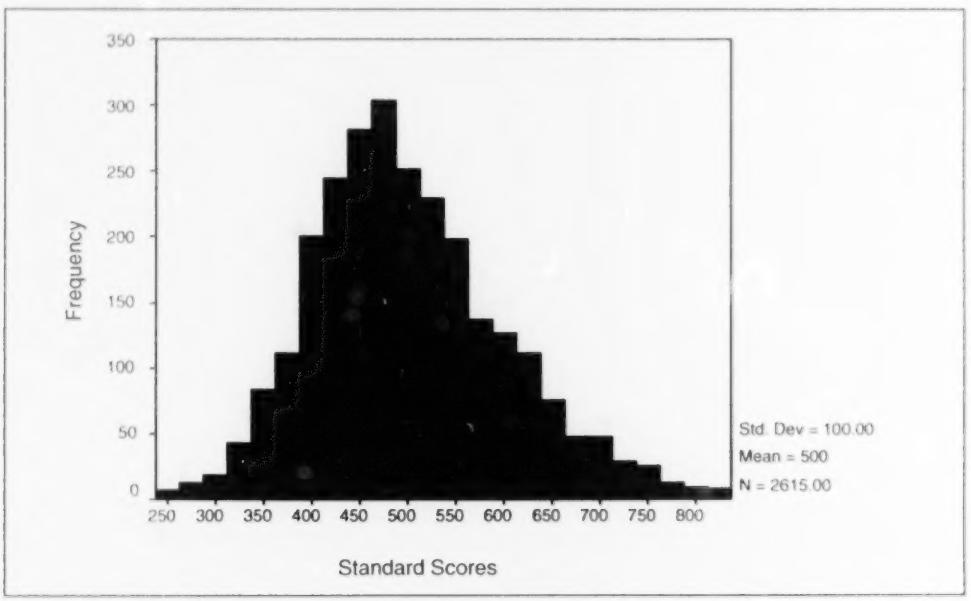

Figure 1. Distribution of Standardized Stress Event Scores for American River College Students.

To "humanize" these total scores a bit, consider but one case of a young male with a high GPA who scored two standard deviations above the mean score. Here is what he endorsed as having happened to him within the past 12 months:

Difficulties with parents, oversleeping for an exam, new job, finals week, change in work hours or conditions, writing a major term paper, major change in eating habits, flunking a class, a class you hate, ending a steady dating relationship, having a boyfriend or girlfriend cheat on you, financial difficulties, change in sleeping habits, difficulties with spouse/significant other, sense of overload in school or work, negative consequences of drugs or alcohol, difficulties with children, talking or performing in front of a class, lack of sleep, changes in household situation (moved, other person/child moved in), difficulties with a roommate (not spouse or significant other), death of a close friend (not family), being accused of sexual harassment/rape, death of a close family member or spouse, contacting a sexually transmitted disease (other than AIDS), declaring a major or concerns about immediate future educational plans, serious illness in a close friend or family member, confrontation with professor, maintaining a steady relationship, problems commuting to campus, work, or both, finding out you are HIV-positive, getting sick and thereby missing class/work or both, major concerns about your appearance, falling asleep in class.

Little wonder that some students seem a bit frazzled while on campus!

Various one-way analysis of variance tests (and one *t* test) were run between groups which make up the demographic items (44 through 48). The first such comparison was total stress event score by gender (Table 2). The results indicate no statistically significant difference between the means of male and female students.

Table 2. Gender and Stress Events Scores

Gender	N	Mean	SD
Male	946	500.60	106.49
Female	1,669	499.66	96.16
t (2613)= 0.23, *ns*		Eta^2=.00	

The next analysis compared total stress scores by age groups. These results are shown in Table 3. The highest stress scores were generated by younger students (20-24 years). The overall *F* value was statistically significant which called for post ANOVA analysis using Tukey's *HSD* statistic. All the significant post hoc comparisons may be found in Table 3.

Ethnic groups were compared using one-way ANOVA. These results may be seen in Table 4. The results indicate that white students, taken collectively, have significantly less stress event scores than non-white students except for Asian students.

Table 3. Age and Stress Event Scores

Age	N	Mean	SD
20 or less	1001	504.68	96.01
21 - 24	715	510.12	92.14
25 - 29	358	496.91	111.03
30 - 39	305	485.67	109.06
40 +	236	472.71	103.28

F (4, 2610) = 8.52, p < .001 Eta^2 = .013

Tukey *HSD*
20 or less > 30-39 (p < .05); 20 or less > 40+ (p < .001)
21-24 > 30-39 (p < .01); 21-24 > 40+ (p < .001)
25-29 > 40+ (p < .05)

Table 4. Ethnicity and Stress Event Scores

Ethnicity	N	Mean	SD
Asian	181	511.80	108.10
African American	233	518.49	105.26
White	1,717	491.18	96.85
Hispanic	252	521.54	97.84
Other	232	514.07	105.41

F (4, 2610) = 10.17, p < .001 Eta^2 = .015

Tukey *HSD*
African American > White (p = .001)
Hispanic > White (p < .001)
Other > White (p < .01)

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We wished to determine if the current student unit load had any relationship with stress event scores. These results are seen in Table 5 and indicate that middle-time students (7-11 units) experience more weighted stress events than either students carrying 1-6 units or students who are presently full-time (12+ units).

Table 5. Current Student Load and Stress Event Scores

Load	N	Mean	SD
1-6 Units	344	494.16	113.04
7-11 Units	732	509.50	102.39
12+ Units	1,539	496.79	95.41

F (2, 2612) = 4.70, $p < .01$ $Eta^2 = .004$

Tukey *HSD*
7-11 Units > 1-6 Units ($p < .05$); 7-11 Units > 12+ Units ($p < .05$)

The relationship between cumulative college GPA and stress event scores can be seen in Table 6. It would appear that lower performing groups (2.49 GPA and lower) experience more weighted stress events than higher performing students (3.00+ GPA).

Table 6. Total College GPA and Stress Event Scores

GPA	N	Mean	SD
No College Units	223	510.64	116.81
1.99 or Less	114	527.43	85.73
2.00 – 2.49	352	517.64	96.59
2.50 – 2.99	581	509.49	100.07
3.00 – 3.49	807	495.36	97.35
3.50+	538	474.95	95.83

F (5, 2609) = 12.84, $p < .001$ $Eta^2 = .024$

Tukey *HSD*
No College Units > 3.50+ ($p < .001$)
1.99 or less > 3.00 - 3.49 ($p < .05$); 1.99 or less > 3.50+ ($p < .001$)
2.00 – 2.49 > 3.00 - .349 ($p < .01$); 2.00 – 2.49 > 3.50+ ($p < .001$)
2.50 – 2.99 > 3.50+ ($p < .001$)
3.00 – 3.49 > 3.50+ ($p < .01$)

Finally, while there are several statistically significant differences among the various student groups with respect to stress event scores, the magnitude of variance explained is quite small as indicated by the eta^2 values. In order to determine the collective magnitude of all the demographic variables, a multiple regression model (stepwise option) was used. The independent variables allowed within the model were *level of college GPA, white or not, and age group* which collectively accounted for only a small amount of the variance in stress event scores, ($R^2 = .032$, $p < .001$). In other words, lower GPA, not being white, and being of younger age were all correlated with higher stress event scores but these variables still offered very modest predictive capability. It must also be stated here that these independent variables (i.e., college GPA, white, age) cannot be considered causes of stress. This was post facto study. Therefore, one must consider all statistically significant differences as really being correlational findings.

Stress Item Results

Because of the inherent interest in stress, we performed a few analyses based upon specific stress events items within the questionnaire. First among these is Table 7 showing the estimated means (from 128 students to established item weights), the item weights (the basis for total scores), the obtained item means from each sample (fall 98 & spring 99), and the composite item means for both groups. Note that the item means, using the scale *Not at all stressful* to *Extremely stressful*, were established only by students who had experienced the event within the past 12 months. Thus item #1 (*Difficulties with parents*) resulted in a mean of 2.69 on the 5-point scale. This suggests that those students who indicated they had difficulties with parents collectively rated the item as falling between *Slightly stressful* (2) to *Moderately stressful* (3).

*Scale:

1) *Not at all stressful;*
2) *Slightly stressful*
3) *Moderately stressful*
4) *Highly stressful*
5) *Extremely stressful*

Table 7. Means for Stress Event Items Including Weights*

Item	Weight	Estimated Mean	F98 Mean	S99 Mean	Combined Mean
		(1)	(2)	(3)	(4)
1	43	3.15	2.67	2.69	2.69
2	57	3.61	2.73	2.55	2.62
3	40	3.04	2.81	2.70	2.74
4	76	4.18	3.62	3.47	3.53
5	35	2.85	2.73	2.71	2.72
6	57	3.63	3.33	3.35	3.34
7	22	2.23	2.37	2.29	2.32
8	82	4.34	3.85	3.67	3.75
9	42	3.10	3.17	3.08	3.12
10	70	4.02	3.63	3.58	3.60
11	84	4.41	4.00	3.85	3.91
12	79	4.27	3.65	3.52	3.57
13	33	2.77	2.75	2.67	2.70
14	64	3.83	3.31	3.19	3.23
15	69	3.98	3.52	3.37	3.44
16	52	3.47	3.14	2.81	2.97
17	54	3.52	2.98	2.97	2.98
18	68	3.95	2.88	2.78	2.81
19	49	3.36	2.92	2.89	2.89
20	37	2.92	2.86	2.73	2.78
21	39	2.98	2.95	2.84	2.88
22	39	3.00	2.90	2.87	2.88
23	39	3.01	3.03	2.90	2.95
24	80	4.30	4.08	3.86	3.96
25	100	4.80	4.35	4.19	4.27
26	86	4.46	3.96	3.40	3.66
27	98	4.76	4.24	4.09	4.16
28	87	4.48	3.76	3.77	3.76
29	44	3.19	3.01	3.02	3.01
30	58	3.66	3.28	3.04	3.13
31	68	3.97	3.68	3.51	3.59
32	43	3.16	2.78	2.57	2.66
33	33	2.77	2.71	2.62	2.65
34	38	2.95	2.55	2.42	2.47
35	99	4.78	3.78	3.90	3.83
36	48	3.33	2.95	2.87	2.91
37	29	2.57	2.37	2.38	2.37
38	21	2.20	2.23	2.05	2.11
39	84	4.39	2.64	3.40	3.52
40	83	4.38	3.82	3.65	3.70
41	82	4.35	3.60	3.39	3.47
42	68	3.97	3.27	2.75	3.03
43	74	4.13	3.47	3.32	3.51

Pearson r correlation coefficients among column means: $r_{12} = .88$; $r_{13} = .90$; $r_{14} = .93$; $r_{23} = .94$

Table 8 shows the stress event items (with original item number) in descending order based upon the number of students who indicated they had experienced the event within the past 12 months. Thus *Lack of sleep* (item #21 on the questionnaire) was endorsed by 91.3% of all surveyed students who also gave the item a mean of 2.88, close to *Moderately stressful* (3).

Table 8. Stress Event Items Endorsed by Students (In Order of Endorsement)

STRESS ITEM	% 2615 STUDENTS THAT AFFIRMED	1-5 pt. MEAN
Lack of sleep [#21]	91.3%	2.88
Sense of overload in school or work [#15]	90.8%	3.44
Finals week [#04]	90.2%	3.53
Financial difficulties [#12]	87.2%	3.57
Talking or performing in front of class [#20]	86.5%	2.78
Writing a major term paper [#06]	85.5%	3.34
Difficulties with parents [#01]	83.5%	2.69
Declaring a major or concerns about immediate future educational plans [#29]	83.4%	3.01
Major concerns about your appearance [#37]	82.5%	2.37
Change in sleeping habits [#13]	81.6%	2.70
Change in work hours or conditions [#05]	81.2%	2.72
A class you hate [#09]	76.6%	3.12
Getting sick and thereby missing class, work, or both [#36]	75.4%	2.91
Maintaining a steady relationship [#33]	74.2%	2.65
Problems commuting to campus, work or both [#34]	70.9%	2.47
Major change in eating habits [#07]	70.1%	2.32
New job [#03]	68.6%	2.74
Difficulties with spouse/significant other [#14]	66.6%	3.23
Changes in household situation [#22]	59.5%	2.88
Oversleeping for exam [#02]	57.0%	2.62
Falling asleep in class [#38]	55.2%	2.11
Flunking a class [#08]	53.1%	3.75
Ending a steady dating relationship [#10]	52.4%	3.60
Serious illness in a close friend or family member [#31]	52.4%	3.59
Confrontation with professor [#32]	45.6%	2.66
Concerns about you or you partner becoming pregnant [#30]	42.9%	3.13
Having a boyfriend or girlfriend cheat on you [#11]	40.2%	3.91
Difficulties with roommate [#23]	39.0%	2.95
Difficulties with children [#19]	34.2%	2.89
Negative consequences of drugs or alcohol [#18]	32.8%	2.81
Death of close family member or spouse [#27]	32.7%	4.16
Death of close friend [#24]	29.4%	3.96
Finding quality child care [#16]	19.6%	2.97
Getting married [#17]	16.0%	2.98
Contracting a sexually transmitted disease (not AIDS) [#28]	15.6%	3.76
Fired at work [#41]	15.1%	3.47
Being pregnant [#43] (females only)	9.3%	3.51
Marital separation [#40]	9.1%	3.70
Divorce [#39]	8.4%	3.52
Finding out you are HIV positive [#35]	8.2%	3.83
Being accused of sexual harassment/rape [#26]	8.1%	3.66
Being Raped [#25]	7.7%	4.27
Self impotency [#42] (males only)	5.8%	3.03

Scale: *(1) Not at all stressful; (2) Slightly stressful; (3) Moderately stressful; (4) Highly stressful; (5) Extremely stressful*

Table 9 gives the stress event items in descending order based upon the mean values. Here the most stressful event was #25 *Being raped*, endorsed by 7.7% of the students surveyed and given a mean value of 4.27 which falls between *Highly stressful* (4) and *Extremely stressful* (5).

Table 9. Stress Event Items Endorsed by Students (In Order of Means)

STRESS ITEM	% 2615 STUDENTS THAT AFFIRMED	1-5 pt. MEAN
Being Raped [#25]	7.7%	4.27
Death of close family member or spouse [#27]	32.7%	4.16
Death of close friend [#24]	29.4%	3.96
Having a boyfriend or girlfriend cheat on you [#11]	40.2%	3.91
Finding out you are HIV positive [#35]	8.2%	3.83
Contracting a sexually transmitted disease (not AIDS) [#28]	15.6%	3.76
Flunking a class [#08]	53.1%	3.75
Marital separation [#40]	9.1%	3.70
Being accused of sexual harassment/rape [#26]	8.1%	3.66
Ending a steady dating relationship [#10]	52.4%	3.60
Serious illness in a close friend or family member [#31]	52.4%	3.59
Financial difficulties [#12]	87.2%	3.57
Finals week [#04]	90.2%	3.53
Divorce [#39]	8.4%	3.52
Being pregnant [#43] (females only)	9.3%	3.51
Fired at work [#41]	15.1%	3.47
Sense of overload in school or work [#15]	90.8%	3.44
Writing a major term paper [#06]	85.5%	3.34
Difficulties with spouse/significant other [#14]	66.6%	3.23
Concerns about you or you partner becoming pregnant [#30]	42.9%	3.13
A class you hate [#09]	76.6%	3.12
Self impotency [#42] (males only)	5.8%	3.03
Declaring a major or concerns about immediate future educational plans [#29]	83.4%	3.01
Getting married [#17]	16.0%	2.98
Finding quality child care [#16]	19.6%	2.97
Difficulties with roommate [#23]	39.0%	2.95
Getting sick and thereby missing class, work, or both [#36]	75.4%	2.91
Difficulties with children [#19]	34.2%	2.89
Lack of sleep [#21]	91.3%	2.88
Changes in household situation [#22]	59.5%	2.88
Negative consequences of drugs or alcohol [#18]	32.8%	2.81
Talking or performing in front of class [#20]	86.5%	2.78
New job [#03]	68.6%	2.74
Change in work hours or conditions [#05]	81.2%	2.72
Change in sleeping habits [#13]	81.6%	2.70
Difficulties with parents [#01]	83.5%	2.69
Confrontation with professor [#32]	45.6%	2.66
Maintaining a steady relationship [#33]	74.2%	2.65
Oversleeping for exam [#02]	57.0%	2.62
Problems commuting to campus, work or both [#34]	70.9%	2.47
Major concerns about your appearance [#37]	82.5%	2.37
Major change in eating habits [#07]	70.1%	2.32
Falling asleep in class [#38]	55.2%	2.11

Scale: *(1) Not at all stressful; (2) Slightly stressful; (3) Moderately stressful; (4) Highly stressful; (5) Extremely stressful*

The last analysis examined gender differences for each stress event item. Using a four-fold table (experienced the event or not, and male versus female) produced several statistically significant 2 x 2 chi square values. These are presented in Table 10. Because the traditional alpha level of .05 gets seriously inflated when making multiple comparisons, we suggest only considering those chi square probabilities less than the .001 level (note: .05 divided by 43 = .0016). Also within Table 10 are the mean values for those students who experienced the stress event. Statistical analysis in this case employed one-way analysis of variance to establish significance level. Once again, it is probably best to consider only those mean differences which are significant at the .001 level. Take the first item in Table 10 (*Getting sick, and missing class, work, or both*, #36). Female students endorsed this item more frequently than male students (79.2% versus 68.6%) and gave the item a higher stress mean as well (3.01 versus 2.69). Both differences are statistically significant ($p < .001$).

Table 10. Endorsement of Stress Event Items Listed by Gender Along With Mean Ratings

ITEM	ENDORSEMENT			MEAN RATING		
	Male %	Female %	*p*	Male Mean	Female Mean	*p*
Getting sick and missing class, work, or both [#36]	68.6	79.2	<.001	2.69	3.01	<.001
Finding quality child care [#16]	14.9	22.3	<.001	2.78	3.04	ns
Difficulties with spouse/significant other [#14]	61.9	69.3	<.001	3.00	3.35	<.001
Being Raped [#25]	5.5	9.0	<.01	3.90	4.40	<.01
Major concerns about your appearance [#37]	79.4	84.2	<.01	2.21	2.46	<.001
Difficulties with children [#19]	30.5	36.3	<.01	2.64	3.00	<.001
Major change in eating habits [#07]	66.9	71.9	<.01	2.15	2.40	<.001
Lack of sleep [#21]	89.3	92.4	<.01	2.73	2.97	<.001
Financial difficulties [#12]	84.9	88.4	<.01	3.39	3.67	<.001
Sense of overload in school or work [#15]	89.0	91.9	<.05	3.27	3.53	<.001
Change in sleeping habits [#13]	79.4	82.8	<.05	2.57	2.78	<.001
Being accused of sexual harassment/rape [#26]	12.5	5.6	<.001	3.63	3.70	ns
Negative consequences of drugs or alcohol [#18]	39.1	29.3	<.001	2.76	2.84	ns
Falling asleep in class [#38]	60.9	51.9	<.001	2.02	2.17	<.05
Oversleeping for exam [#02]	62.4	54.0	<.001	2.50	2.69	<.001
Fired at work [#41]	18.8	13.1	<.001	3.27	3.64	<.05
Confrontation with professor [#32]	50.3	42.9	<.001	2.55	2.73	<.05
Flunking a class [#08]	57.1	50.9	<.01	3.55	3.88	<.001
Problems commuting to campus, work or both [#34]	73.7	69.4	<.05	2.41	2.51	ns

Scale: *(1) Not at all stressful; (2) Slightly stressful; (3) Moderately stressful; (4) Highly stressful; (5) Extremely stressful*

Summary & Recommendations

Having pursued the analyses this far, the following conclusions may be drawn:

- A little over 16% of this sample had stress event scores that placed them at least one standard deviation above the mean. Slightly over 4% of the students had scores that fell beyond two standard deviations.

- There was no statistically significant difference between the total stress event means of male and female students. However, there were gender differences in the rate of endorsement for several individual items making up the scale.

- Younger students ($\leq$ 24 years) had higher total stress event means than older students (25+ years).

- Non-white students had higher total stress event means than white students.

- Students carrying 7-11 units had higher total stress event means than either part-time or full-time students.

- Students with lower GPA's (1.99 or less) and those with modest GPA's (2.00 to 2.49) had higher total stress event means than students with GPA's of 3.00 or higher.

The development of this stress event scale along with data collection, provided students enrolled in a statistics for the behavioral sciences course with first hand experience - from defining a research problem to the final written report which includes many of the statistical analyses they had been studying.

The principal findings from this project would suggest that many students are excessively stressed which undoubtedly affects their academic performance. As the student body gets progressively older (median age = 26), we can expect current and future students to have more complicated lives than their predecessors. Marital breakup, single parenthood, finding child care, working full-time and carrying many units in college, and struggling to make financial ends meet on near minimum wages, are but a few things that have become more noticeable with our current students. Many students even seem stressed by a non-rigorous course assignment that must be done outside of class but on campus. Such students indicate that they have no available extra time to spend on campus. Instead they rush off to work or pick up their children. If students have more complicated lives than ever before, what can the college do to help? Some suggestions follow:

1. Faculty might explore flexibility regarding "rules" of conduct for their courses. Many times students who come to class late, leave early, or even miss a test date do so for important reasons having nothing to do with "irresponsible behavior" toward the course, the instructor, or taking a test. Faculty can separate the responsible students from the ones who are irresponsible. In short, there are many ways that faculty can be more accommodating to the current type of student.

2. Faculty and other staff need to be aware of what support services exist both on and off campus. With this knowledge they are in a better position of making referrals for students experiencing personal difficulties in their lives.

3. Students and faculty need to keep the lines of communication open. This is not to say that faculty should get highly involved with student problems originating outside their courses. However, faculty need to communicate to their students an interest in being kept informed and students need to so inform faculty.

4. There should be adequate tutoring available for every course on campus. Student fear of low academic performance is real. We know from past experience that student academic success is higher in those courses for which tutoring is available.

5. Student service personnel need to offer students considerable exposure to topics such as stress management, finance management, short-term and long-term goal setting, self-esteem issues, and skills for academic success. Such opportunities for learning might be best administered through specific curriculum rather than as incidental workshops.

6. New freshmen are the students most at risk in terms of low academic performance. Discussion of topics affecting stress levels seems especially appropriate for them.

7. The individual stress event items listed in Table 8 should be examined for possible college intervention. For example, an innovative class schedule might be able to accommodate students whose work hours are suddenly shifted.

Finally, as Renner and Mackin point out in their 1998 article, local circumstances and the unique characteristics of a student population make our findings and recommendations applicable only for our college. Others who wish to check stress levels or the physical and emotional well being of students on their campuses may use this stress survey but certainly should collect their own normative information.

References

Blaukopf, P. (1981) The impact of life change events on women's decisions to return to college. (ERIC Document Reproduction Service No. ED 209 496)

Dalton, J. H. (1983). Stressful life events, locus of control, and social support networks as predictors of maladjustment and illness among college freshmen. (ERIC Document Reproduction Service No. ED 244 171)

Daniels, R. L. (1982). Life change unit rating scale for college students. *Health Education, 13*, 29-31.

De Meuse, K. P. (1985). The relationship between life events and indices of classroom performance. *Teaching of Psychology, 12*, 149-149.

Frazier, P. A. & Schauben, L. J. (1994). Stressful life events and psychological adjustment among female college students. *Measurement and Evaluation in Counseling and Development, 27*, 280-292.

Holmes, T. H. & Rahe, R. H. (1967). The social readjustment rating scale. *Journal of Psychosomatic Research, 11*, 213-218.

Knapp, S. (1975). The relationship of life events to academic performance in college students. (ERIC Document Reproduction Service No. ED 162 241)

Lustman P. J. (1984). Factors influencing college student health: Development of the psychological distress inventory. *Journal of Counseling Psychology, 31*, 28-35.

O'Leary, A. (1990). Stress, emotion, and human immune function. *Psychological Bulletin, 108*, 363-382.

Renner, M. J. & Mackin, S. R. (1998). A life stress instrument for classroom use. *Teaching of Psychology, 25*, 46-48.

Roehl, J. E. & Okun, M. A. (1984). Depression symptoms among women reentering college: The role of negative life events and family social support. *Journal of College Student Personnel, 25*, 251-254.

Selye, H. (1976). *The stress of life*. New York: McGraw-Hill.

Sowa, C. J. & Lustman P. J. (1984). Gender differences in rating stressful events, depression, and depressive cognition. *Journal of Clinical Psychology, 40*, 1334-1337.

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